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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HOFFMAN, BRANDON S

ART UNIT	PAPER NUMBER
2136	S

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/685,026	MARTINS ET AL.
	Examiner Brandon Hoffman	Art Unit 2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-27 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 October 2000 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: figure 1, reference numbers 106, 115, 116, 125, and 126 do not appear. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

- On page 8, line 16, "Figure 2A" should be –Figure 2–.
- On page 8, line 19, figure 2B does not exist, therefore this line should be deleted.
- On page 12, line 3, "communication adapter 334" should be –communication adapter 341–.
- On page 15, line 1, "possible" should be –possibly–.

Appropriate correction is required.

Claim Rejections - 35 USC § 112 – 2nd Paragraph

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 8 and 15-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "said reader" in line 8, page 17. There is insufficient antecedent basis for this limitation in the claim.

Claims 15-19 are dependent upon claim 8, and therefore inherit its deficiencies.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-7, 9, 13, 24, 25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leppek (U.S. Patent No. 5,933,501) in view of Maillard et al. (U.S. Patent No. 6,466,671).

Regarding claims 1 and 27, Leppek teaches [a signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform] a method for preventing counterfeiting and cloning of smart cards, comprising: providing a smart card with a cryptographic structure for authorizing the smart card which cannot be accessed completely by a predetermined number of readings (abstract and col. 4, lines 8-66), wherein said cryptographic

Art Unit: 2136

structure can be built only by whoever emits the card or an agent thereof (col. 4, lines 33-38, the key supplies the proper sequence).

Leppek does not teach the device is a smart card.

Maillard et al. teaches the device is a smart card (abstract).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to implement the teachings of Leppek onto a smart card, as taught by Maillard et al. It would have been obvious to one of ordinary skill in the art to implement the teachings of Leppek onto a smart card, as taught by Maillard et al., because smart cards are small, easy to use mediums for encryption; to provide a method which prevents a footprint or playback attack from being performed by an intruder would help spread the acceptance of smart cards used in technology (see col. 2, lines 25-38 of Leppek).

Regarding claim 3, the combination of Leppek in view of Maillard et al. teaches wherein an entire process of said method is performable off-line (the Examiner takes Official Notice that in smart card technology, comprising a reader, the transfer of information from smart card to reader is performed off-line, meaning no network connection is established for obtaining key information or other information needed to authenticate the device).

Regarding claim 4, the combination of Leppek in view of Maillard et al. teaches wherein said smart card carries thereon predetermined N channels as C1, C2, ..., CN, wherein N is an integer (see fig. 2, ref. num 100 of Leppek), wherein each channel Ci, with i equal to 1, 2, ..., N, carries a pair of numbers (hi, li), and wherein hi is the ith high number and li is the ith low number (see fig. 2, ref. num 110-1 through 110-N of Leppek).

Regarding claim 5, the combination of Leppek in view of Maillard et al. teaches further comprising:

- Using public key cryptography with associated encoding and decoding functions V_i and V_i^{-1} in each channel i,
- Wherein each function V_i^{-1} is known publicly, and V_i is known only to a predetermined party representing an owner of the smart card (see page 6, lines 1-5 of applicants disclosure, applicant submits this information is well known as taught by Menezes et al.).

Regarding claim 6, the combination of Leppek in view of Maillard et al. teaches:

- Wherein for each i in 1, 2, ..., N, the pair (hi, li) is such that $hi = V_i(li)$, or $hi = V_i(K(li))$, where K represents a publicly-known cryptographic hash function, and
- Wherein each li contains a plurality of symbols for redundancy (see page 6, lines 6-8 of applicants disclosure, applicant submits this information is well known as taught by Menezes et al.).

Art Unit: 2136

Regarding claim 7, the combination of Leppek in view of Maillard et al. teaches further comprising processing, using an invertible function f which is made public, such that the low numbers in said smart card satisfy $I(i+j) = f^j(Ii)$, where f^j represents the j^{th} iteration of the function f (see col. 5, lines 19-52 of Leppek).

Regarding claim 9, the combination of Leppek in view of Maillard et al. teaches wherein a reader obtains a content of only two of said channels (see col. 4, lines 33-42 of Leppek, the number does not specifically state two, but is any number less than the total number of keys contained in the smart card).

Regarding claim 13, the combination of Leppek in view of Maillard et al. teaches wherein said cryptographic structure is changed periodically (see col. 1, lines 41-47 of Maillard et al.).

Regarding claim 24, Leppek teaches a method of preventing counterfeiting of a smart card, comprising:

- Providing a smart card such that none of confidential information and a cryptographic key for authorizing the smart card, is carried on the smart card (col. 4, lines 7-17);
- Reading said card by a reader such that in each reading, said reader reads only a predetermined small amount of information which makes the card unique (col. 4, lines 33-42).

Leppek does not specifically teach the device is a smart card or that a card reader performs the reading.

Maillard et al. teaches the device is a smart card (fig. 2, ref. num 3020) and a card reader performs the reading (fig. 2, ref. num 2020).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the device being a smart card and the reading is a card reader, as taught by Maillard et al., with the method of Leppek. It would have been obvious to combine the device being a smart card and the reading is a card reader, as taught by Maillard et al., with the method of Leppek because smart cards are small, easy to use mediums for encryption and a card reader would be required to read the data contained on the small smart card.

Regarding claim 25, the combination of Leppek in view of Maillard et al. teaches wherein a transaction performed under said method comprises substantially an off-line transaction (the Examiner takes Official Notice that in smart card technology, comprising a reader, the transfer of information from smart card to reader is performed off-line, meaning no network connection is established for obtaining key information or other information needed to authenticate the device).

Art Unit: 2136

Claims 2, 10-12, 14, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leppek (U.S. Patent No. 5,933,501) in view of Maillard et al. (U.S. Patent No. 6,466,671), and further in view of Perlman et al. (U.S. Patent No. 5,261,002).

Regarding claim 2, the combination of Leppek in view of Maillard et al. teaches providing a reader for reading said smart card (fig. 2, ref. num 2020 of Maillard et al.). However, the combination of Leppek in view of Maillard et al. does not teach further comprising including a database holding information related to unauthorized smart cards, said reader being on-line, such that said reader is operatively connected to a network, only when said database of said reader is being updated by said network.

Perlman et al. teaches further comprising including a database holding information related to unauthorized smart cards (col. 6, lines 37-39), said reader being on-line, such that said reader is operatively connected to a network, only when said database of said reader is being updated by said network (col. 3, lines 38-40 and fig. 1, ref. num 24-30, the concept of the invention in Perlman et al., when applied to Leppek and Maillard et al., shows a receiver (reader) of a request from a potential intruder (smart card) performing the steps necessary to check a blacklist of already expired or invalid intruders (smart cards)).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine including a database of unauthorized smart cards and

Art Unit: 2136

periodically going online with the reader to obtain a newer list, as taught by Perlman et al., with the method of Leppek/Maillard et al. It would have been obvious to combine including a database of unauthorized smart cards and periodically going online with the reader to obtain a newer list, as taught by Perlman et al., with the method of Leppek/Maillard et al. because the off-line version of the blacklist provides a listing of all users who are intruders; the periodic updating allows a newer list of intruders to be known, without performing the update constantly – tying up a lot of resources.

Regarding claim 10, the combination of Leppek in view of Maillard et al. teaches all the limitations of claim 1 above. However, the combination of Leppek/Maillard et al. does not teach further comprising periodically communicating, by a reader of said smart card, with a database where a predetermined characteristic of the card is checked.

Perlman et al. teaches further comprising periodically communicating, by a reader of said smart card, with a database where a predetermined characteristic of the card is checked (col. 3, lines 38-40 and fig. 1, ref. num 16-18).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine periodically communicating with a database where a predetermined characteristic of the card is checked, as taught by Perlman et al., with the method of Leppek/Maillard et al. It would have been obvious to combine periodically communicating with a database, as taught by Perlman et al., with the

method of Leppek/Maillard et al. because the off-line version of the blacklist provides a listing of all users who are intruders; the periodic updating allows a newer list of intruders to be known, without performing the update constantly – tying up a lot of resources.

Regarding claim 11, the combination of Leppek in view of Maillard et al. and further in view of Perlman et al. teaches wherein the predetermined characteristic comprises whether a smart card has delivered more than a predetermined amount of money to a user of the smart card (see col. 7, lines 21-23 of Perlman et al., although Perlman discloses the predetermined condition to be a preset time limit, other reasons for refusing the smart card exist, dependent on the use of the card. In this case it is certificates, so the time limit is a predetermined condition. In the case of a money card, a limit spent or received would be an obvious threshold.).

Regarding claim 12, the combination of Leppek in view of Maillard et al. and further in view of Perlman et al. teaches wherein if a card is detected as delivering too much money, the database communicates a corresponding number l1 to all readers in a network, so that smart cards carrying said corresponding number are declined (see col. 7, lines 14-26 of Perlman et al.).

Regarding claim 14, the combination of Leppek in view of Maillard et al. teaches all the limitations of claim 1, above. However, the combination of Leppek in view of

Art Unit: 2136

Maillard et al. does not teach wherein said smartcard is invalidated after a predetermined time of usage.

Perlman et al. teaches wherein said smartcard is invalidated after a predetermined time of usage (fig. 2, ref. num 42).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine invalidating the smart card after a predetermined time of usage, as taught by Perlman et al., with the method of Leppek/Maillard et al. It would have been obvious to combine invalidating the smart card after a predetermined time of usage, as taught by Perlman et al., with the method of Leppek/Maillard et al. because the time limit threshold provides more security by allowing only a certain time of use. After the time limit has expired, it would be safe to say that the user did not want to use the card anymore, or if the user does want to use the card, the user can renew his/her time for the card.

Regarding claim 23, the combination of Leppek in view of Maillard et al. teaches that the device is a smart card and there exists a reader for reading the smart card (see fig. 2, ref. num 2020 and 3020). However, the combination of Leppek in view of Maillard et al. does not teach further comprising: performing a final validation of the smart card by at least one of: contacting a central database if an entire transaction is made on-line with no penalty; and checking with a local database in a reader, said local database

Art Unit: 2136

being refreshed periodically by contact between said local database and said central database.

Perlman et al. teaches further comprising:

- Performing a final validation of the smart card by at least one of: contacting a central database if an entire transaction is made on-line with no penalty; and checking with a local database in a reader (col. 6, lines 37-39),
 - Said local database being refreshed periodically by contact between said local database and said central database (col. 3, lines 38-40 and fig. 1, ref. num 24-30).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the reader including a database for linking to a network for periodic updates, as taught by Perlman et al., with the system of Leppek/Maillard et al. It would have been obvious to combine the reader including a database that is periodically updated, as taught by Perlman et al., with the system of Leppek/Maillard et al. because the off-line version of the blacklist provides a listing of all users who are intruders; the periodic updating allows a newer list of intruders to be known, without performing the update constantly – tying up a lot of resources.

Regarding claim 26, the combination of Leppek teaches a system for preventing cloning of a smart card, comprising:

Art Unit: 2136

- A smart card such that a cryptographic structure for authorizing the smart card is not carried on the smart card (col. 4, lines 7-17); and
- Wherein said cryptographic structure is kept secret by whoever emits the card or an agent thereof (col. 4, lines 33-38, the key supplies the proper sequence).

Leppek does not teach the device is a smart card or a reader for reading the smart card and including a database for linking to a network and being updated periodically with a list of unauthorized smart cards.

Maillard et al. teaches the device is a smart card (fig. 2, ref. num 3020) and a reader for reading the smart card (fig. 2, ref. num 2020).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the device being a smart card and the reading is a card reader, as taught by Maillard et al., with the method of Leppek. It would have been obvious to combine the device being a smart card and the reading is a card reader, as taught by Maillard et al., with the method of Leppek because smart cards are small, easy to use mediums for encryption and a card reader would be required to read the data contained on the small smart card.

The combination of Leppek in view of Maillard et al. still does not teach reading the smart card and including a database for linking to a network and being updated periodically with a list of unauthorized smart cards.

Perlman et al. teaches reading the smart card and including a database for linking to a network and being updated periodically with a list of unauthorized smart cards (col. 6, lines 37-39 and col. 3, lines 38-40 and fig. 1, ref. num 24-30).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the reader including a database for linking to a network for periodic updates of unauthorized smart cards, as taught by Perlman et al., with the system of Leppek/Maillard et al. It would have been obvious to combine the reader including a blacklist database that is periodically updated, as taught by Perlman et al., with the system of Leppek/Maillard et al. because the off-line version of the blacklist provides a listing of all users who are intruders; the periodic updating allows a newer list of intruders to be known, without performing the update constantly – tying up a lot of resources.

Claims 8, 15-18, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leppek (U.S. Patent No. 5,933,501) in view of Maillard et al. (U.S. Patent No. 6,466,671), and further in view of Schneier, "Applied Cryptography:

Protocols, Algorithms, and Source Code in C," Second Edition, pps. 466-474
(hereinafter referred to as Schneier).

Regarding claim 8, the combination of Leppek in view of Maillard et al. teaches all the limitation of claims 1 and 4-6, above. However, the combination of Leppek in view of Maillard et al. does not teach wherein said reader includes a random number generator, which, when a card is read, chooses a pair (a, b) of distinct numbers with a < b between 1 and N, wherein before processing the smart card, the reader obtains the pair (ha, la) and hb; using the public keys Va⁻¹ and Vb⁻¹, checking by the reader whether the pairs (ha, la) and (hb, lb) are compatible, and, consequently, that the numbers ha, la, and hb belong to a same legitimate card.

Schneier teaches

- Wherein said reader includes a random number generator, which, when a card is read, chooses a pair (a, b) of distinct numbers with a < b between 1 and N, wherein before processing the smart card, the reader obtains the pair (ha, la) and hb (a step of an RSA algorithm, choose two prime numbers, page 467);
- Using the public keys Va⁻¹ and Vb⁻¹, checking by the reader whether the pairs (ha, la) and (hb, lb) are compatible, and, consequently, that the numbers ha, la, and hb belong to a same legitimate card (a step of an RSA algorithm, page 467).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine generating a random number in the reader, choose a pair of distinct numbers, and using the public keys to check the compatibility of the smart card, as taught by Schneier, to the method of Leppek/Maillard et al. It would have been obvious to combine generating a random number in the reader, choose a pair of distinct numbers, and using the public keys to check the compatibility of the smart card, as taught by Schneier, to the method of Leppek/Maillard et al. because these limitations verify a proper smart card based on the key checking, known as a digital signature.

Regarding claim 15, the combination of Leppek as modified by Maillard et al./Schneier teaches wherein said pairs (hi, li) to be contained on the smart card are generated by:

- Choosing a prefix of l1 once for all transactions, or changed whenever needed, wherein said prefix is publicly known (a step of an RSA algorithm, see page 467 of Schneier); and
- Providing a sequence, such that the sequence is generated so that a same number is not chosen twice, and so that corresponding other li's are not chosen as new l1s (a step of an RSA algorithm, see page 467 of Schneier).

Regarding claim 16, the combination of Leppek as modified by Maillard et al./Schneier teaches further comprising:

Art Unit: 2136

- Concatenating the prefix and the sequence to form I1 (a step of an RSA algorithm, forming the product of two primes, see page 467 of Schneier); and
- Choosing a function f which is invertible and is publicly known, to construct I2 = f(I1), I3 f(I2), and so forth (a step of an RSA algorithm, use Euclidean algorithm on two primes, see page 467 of Schneier).

Regarding claim 17, the combination of Leppek as modified by Maillard et al./Schneier teaches wherein the function f is chosen to be the identity map, in which case I1 = I2 = I3 = ... =N (a step of an RSA algorithm, where the message is encrypted in blocks, where the same encryption method is used for each block, see page 467 of Schneier).

Regarding claim 18, the combination of Leppek as modified by Maillard et al./Schneier teaches choosing, for a number N, N public key-private key pairs, such that a first private key V1 is for computing h1 = V1 (I1), a second private key V2 is for computing h2 = V2(I2), and so on (a step of an RSA algorithm, where the message is encrypted in blocks, see page 467 of Schneier).

Regarding claim 20, the combination of Leppek in view of Maillard et al. teaches all the limitations of claim 1, above. However, the combination of Leppek in view of Maillard et al. does not teach wherein, when the smart card is read by a reader, a

random generator is prompted which provides two integer numbers, a and b, which are not between 1 and N, with a < b.

Schneier teaches wherein, when the smart card is read by a reader, a random generator is prompted which provides two integer numbers, a and b, which are not between 1 and N, with a < b (a step of an RSA algorithm, see page 467 of Schneier).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine generating a random number in the reader and choose a pair of distinct numbers, as taught by Schneier, to the method of Leppek/Maillard et al. It would have been obvious to combine generating a random number in the reader and choose a pair of distinct numbers, as taught by Schneier, to the method of Leppek/Maillard et al. because these limitations select a public key of the reader for use in a public key algorithm.

Regarding claim 21, the combination of Leppek as modified by Maillard et al./Schneier teaches wherein said numbers a, b are transmitted to the smart card which delivers two high numbers ha, hb, and a low number la in a channel a, and wherein the pair (a, b), together with a function f in a memory in the reader, are used to compute the low number lb=f^(b-a)(la), said memory in said reader delivering public keys Va⁻¹ and Vb⁻¹ (a step of an RSA algorithm, see page 467 of Schneier).

Regarding claim 22, the combination of Leppek as modified by Maillard et al./Schneier teaches wherein the public keys are used by a comparator together with the pairs (ha, la) and (hb, lb), to verify that the pairs are compatible with the corresponding keys, and that the pairs are from a same legitimate card (a step of an RSA algorithm, see page 467 of Schneier).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leppek (U.S. Patent No. 5,933,501) in view of Maillard et al. (U.S. Patent No. 6,466,671) and in view of Schneier, "Applied Cryptography: Protocols, Algorithms, and Source Code in C," Second Edition, pps. 466-474 (hereinafter referred to as Schneier), and further in view of Perlman et al. (U.S. Patent No. 5,261,002).

Regarding claim 19, the combination of Leppek as modified by Maillard et al./Schneier teaches further comprising: verifying whether the smart card is authentic (digital signature of an RSA algorithm, see page 473 of Schneier).

The combination of Leppek as modified by Maillard et al./Schneier does not teach checking whether the smart card is not in a list of cards to be refused.

Perlman et al. teaches checking whether the smart card is not in a list of cards to be refused (col. 6, lines 37-39).

Art Unit: 2136

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine including a database of unauthorized smart cards, as taught by Perlman et al., with the method of Leppek/Maillard et al./Schneier. It would have been obvious to combine including a database of unauthorized smart cards, as taught by Perlman et al., with the method of Leppek/Maillard et al./Schneier because the provides a listing of all users who are intruders.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon Hoffman whose telephone number is 703-305-4662. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 703-305-9648. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Brandon Hoffman

BH
3/27/04

Ayaz Sheikh

AYAZ SHEIKH

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100